

REMARKS

The application has been reviewed in light of the Office Action dated March 23, 2004. Claims 1-5 are pending, with claims 1, 3 and 5 being in independent form. By this Amendment, Applicant has amended independent claims 1, 3 and 5 to clarify the claimed invention. Applicant respectfully submits that no new matter is introduced by the claim amendments.

Claim 5 was rejected under 35 U.S.C. §112, first paragraph, as purportedly failing to comport with the written description requirement.

In response, claim 5 has been carefully reviewed and amended with particular attention to the points raised in the Office Action. Applicant submits that amended claim 5 is adequately supported by the written description contained in the application as filed. See the application at, for example, page 48, lines 14-19.

Accordingly, withdrawal of the rejection of claim 1-5 under 35 U.S.C. §112 is respectfully requested.

Claims 1-4 were rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent 6,075,920 to Kawamura et al.

Applicant has carefully considered the Examiner's comments and the cited art, and respectfully submits that the pending claims of this application are patentable over the cited art, for at least the following reasons.

This application relates to automatic generation of subcode data for a recording medium. Data recorded on the recording medium typically includes header data, user data, synchronization data and subcode data, and is in a predetermined format for each frame of data. The subcode data facilitates access of the user data on the recording medium. Typically, timing between subcode data and user data must be maintained on the recording medium. Thus, subcode data includes

time information type subcode data, in addition to other types of subcode data.

Conventional techniques for processing subcode data use a linear buffer or a paging region for storing subcode data and retrieve the stored subcode data along with user data for recording on the recording medium. However, frequent memory accesses in each instance typically present an obstacle to satisfactory processing speed (such as for processing for 8x speeds and 10x speed).

Applicant devised techniques for automatic generation of subcode data which overcome these obstacles, by storing and retrieving commands for the automatic generation of the time information type subcode data and commands for the automatic generation of other types of subcode data.

Thus, commands rather than subcode data are held in memory and then retrieved from memory for automatic generation of the subcode data, when data is to be prepared for recording. As shown in FIGS. 11A and 11B of the application, a single stored command in memory can replace and cause to be generated, for example, a hundred subcode data sectors. As a result, memory access is not required for generating each subcode data sector, and thus it is possible to improve memory access efficiency and thereby achieve satisfactory processing speed.

For example, independent claim 1 is directed to a subcode-data generating circuit, which generates subcode data including subcode component data which indicates time information and additional subcode component data which indicates information other than the time information. The subcode-data generating circuit includes a first generating portion, a second generating portion and a selecting portion. The first generating portion automatically generates the subcode component data which indicates the time information. The second generating portion automatically generates the additional subcode component data which indicates the information

other than the time information. The first generating portion operates according to a first command for automatic generation of a plurality of time information subcode component data. The second generating portion operates according to a second command for automatic generation of a plurality of additional subcode component data.

Kawamura, as understood by Applicant, is directed to recording subcode data along with user data onto a recording medium. Subcode is generated and then conventionally held in a buffer 14.

The Office Action contends that Fig. 6 of Kawamura which shows a structure for adding a time code to a subcode is considered to be a command as provided by the claimed invention. Applicant respectfully disagrees.

As acknowledged in the Office Action, the structure shown in Fig. 6 of Kawamura is at best analogous meta data which may be referred to when generating a single subcode sector.

Kawamura does not disclose or suggest structure that enables storage of a single command that would cause a plurality of subcode data to be automatically generated, as provided by the claimed invention. Kawamura clearly requires the subcode data to be generated one sector at a time and then stored in a buffer.

In contrast, the claimed invention provides for the storage of commands, not subcode data, and a plurality of subcode component data can be automatically generated according to a retrieved command. The claimed invention provides for subcode generation that does not adversely affect memory access efficiency and that facilitates satisfactory processing speed.

Since the cited art does not disclose or suggest each and every feature of the claimed invention, the cited art does not render the claimed invention unpatentable.

Independent claim 3 is patentably distinct from the cited art for at least similar reasons.

Accordingly, for at least the above-stated reasons, Applicant respectfully submits that independent claim 1, 3 and 5 and the claims depending therefrom, are allowable.


If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition, and the Commissioner is authorized to charge the requisite fees to our Deposit Account No. 03-3125.

The Office is hereby authorized to charge any additional fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Allowance of this application is respectfully requested.

Respectfully submitted,



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